I claim:

1. A method for controlling an internal combustion engine, comprising the steps of:

determining a knock threshold magnitude;

measuring a knock event magnitude;

determining a difference between said knock threshold magnitude and said knock event magnitude;

adjusting said difference to be within a predetermined range of allowable magnitudes;

selecting a gain factor as a function of the relative magnitudes of said knock threshold magnitude and said knock event magnitude;

multiplying said difference by said gain factor to form a scaled difference;

forming a cumulative magnitude by adding said scaled difference to a summation of previous magnitudes of scaled differences; and

taking corrective action as a function of said cumulative magnitude.

2. The method of claim 1, wherein:

said knock event magnitude is a ratio of two measurements taken at two different times during a common cylinder combustion event.

3. The method of claim 1, wherein:

said gain factor is selected as a function of the algebraic sign of said difference when said difference is determined by subtracting said knock event magnitude from said knock threshold magnitude.

4. The method of claim 1, wherein:

said predetermined range extends from -1 to +1.

5. The method of claim 1, wherein:

said corrective action comprises changing ignition timing.

6. The method of claim 1, wherein:

said corrective action comprises changing fueling.

7. The method of claim 1, wherein:

said corrective action comprises changing an air intake flow magnitude.

8. The method of claim 1, further comprising:

changing ignition timing in response to said cumulative magnitude exceeding a first magnitude; and

changing fueling in response to said cumulative magnitude exceeding a second magnitude.

9. The method of claim 8, further comprising:

changing an air intake flow magnitude in response to said cumulative magnitude exceeding a third magnitude.

10. A method for controlling an internal combustion engine, comprising the steps of:

determining a knock threshold magnitude for said engine;

measuring a knock event magnitude relating to a combustion event of said engine;

determining a difference between said knock threshold magnitude and said knock event magnitude;

selecting a range of allowable magnitudes for said difference;

adjusting said difference to be within said range of allowable magnitudes for said difference;

selecting a gain factor as a function of the algebraic sign of said difference when said difference is determined by subtracting said knock event magnitude from said knock threshold magnitude;

multiplying said difference by said gain factor to form a scaled difference;

forming a cumulative magnitude by adding said scaled difference to a summation of previous magnitudes of scaled differences; and

taking corrective action as a function of said cumulative magnitude.

11. The method of claim 10, wherein:

said knock event magnitude is calculated as a ratio of two knock amplitude measurements taken at two different times during a cylinder combustion event.

12. The method of claim 11, wherein:

said predetermined range extends from -1 to +1.

13. The method of claim 12, further comprising:

changing ignition timing in response to said cumulative magnitude exceeding a first magnitude; and

changing fueling in response to said cumulative magnitude exceeding a second magnitude.

14. The method of claim 13, further comprising:

changing an air intake flow magnitude in response to said cumulative magnitude exceeding a third magnitude.

15. A method for controlling an internal combustion engine, comprising the steps of:

determining a knock threshold magnitude;

measuring a knock event magnitude;

determining a difference between said knock threshold magnitude and said knock event magnitude;

adjusting said difference to be within a predetermined range of allowable magnitudes;

forming a cumulative magnitude by adding said difference to a summation of previous magnitudes of said differences; and

taking corrective action as a function of said cumulative magnitude.

16. The method of claim 15, further comprising:

selecting a gain factor as a function of the relative magnitudes of said knock threshold magnitude and said knock event magnitude;

multiplying said difference by said gain factor to form a scaled difference.

17. The method of claim 16, further comprising:

selecting a gain factor as a function of the relative magnitudes of said knock threshold magnitude and said knock event magnitude;

multiplying said difference by said gain factor to form a scaled difference, said forming step comprising the step of forming said cumulative magnitude by adding said difference to a summation of previous magnitudes of said scaled differences.

18. The method of claim 15, further comprising:

changing a first engine operating characteristic in response to said cumulative magnitude exceeding a first magnitude; and

changing a second engine operating characteristic in response to said cumulative magnitude exceeding a second magnitude.

19. The method of claim 18, wherein:

said first engine operating characteristic is ignition timing.

20. The method of claim 15, wherein:

said knock event magnitude is a ratio of two measurements taken at two different times during a common cylinder combustion event.

21. The method of claim 17, wherein:

said gain factor is selected as a function of the algebraic sign of said difference when said difference is determined by subtracting said knock event magnitude from said knock threshold magnitude.

22. The method of claim 15, wherein:

said predetermined range extends from -1 to +1.

23. The method of claim 18, further comprising:

changing an air intake flow magnitude in response to said cumulative magnitude exceeding a third magnitude